Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claim 1 (Original): A multiparameter method of screening for the diagnosis, the prevention or the treatment of atherosclerosis-related coronary heart disease (CHD) or stroke comprising;

defining the disease as atherosclerosis-related CHD or stroke;

defining the normal as free from said disease;

defining the following parameters as atherosclerotic parameters consisting of c = the Low-density lipoprotein (LDL) concentration parameter in mg/dL or c = the C-reactive protein (CRP) concentration parameter in mg/L, p = the blood systolic pressure parameter in mmHg or p = the blood diastolic pressure parameter in mmHg, f = the heart rate parameter in s^{-1}, a = the radius parameter along arterial radius in cm, T = the temperature parameter of

Page 2 of 21

blood plasma in °C, α = the angle parameter
between gravity and the mean velocity of blood
fluid in arterial vessels in degree and z = the
axial position parameter of diffusion flux
along the inner wall in the axial direction of
arterial vessels in cm, called the diffusion
length;

an individual having the measured values of said
atherosclerotic parameters of the following
expressions:

$$J = A c^{\frac{11}{9}} (v^3 D^{16})^{\frac{1}{27}} \left(\frac{g\cos\alpha + fu}{z} \right)^{\frac{2}{9}} \qquad (1.1)$$

or

$$J = B c^{\frac{11}{9}} p^{\frac{1}{3}} T^{\frac{16}{27}} a^{\frac{2}{3}} f^{\frac{2}{9}} z^{-\frac{2}{9}} \qquad (1.2)$$

and

$$J = E\, c^{\frac{11}{9}} D^{\frac{16}{27}} z^{-\frac{2}{9}} (\cos \alpha)^{\frac{2}{9}} \qquad (1.3)$$

wherein J = the mass transfer flux in 10^{-5}
g/(cm^{2}s), A, B and E = the constants of
conversion factors, v = the eddy velocity of
blood fluid in arterial vessels in cm/s, u =
the mean velocity of the blood fluid in cm/s, D
= the diffusion coefficient in cm^2/s, and g =
the gravitational acceleration in cm/s^2;

the individual having the normal values of said

atherosclerotic parameters;

determining the disease risks yielded by the differences between said measured values and said normal values of said atherosclerotic parameters;

adding all said disease risks together yields a total risk of said disease;

determining a disease risk level containing said total risk of said disease;

selecting an atherosclerotic risk factor related to an atherosclerotic parameter that is the greatest contribution to said total risk of said disease so as to result in said risk factor as a primary therapy target of said disease;

selecting a greater flux between the LDL mass transfer flux and the monocyte mass transfer flux so as to result in said greater flux as a primary cause in said disease;

selecting a greater concentration level between the LDL level in serum and the CRP level in

blood plasma so as to result in said greater

level as a secondary therapy target of said

disease;

determining a relative ratio between currently

said total risk and previously said total risk

so as to yield said relative ratio as a

therapeutic efficacy of said disease;

repeating above-mentioned said methods until said

disease risk level is reduced to a normal level

for said individual who requires the therapy to

prevent or to treat atherosclerosis-related CHD

or stroke; and

above-mentioned said methods are written as an

executable computer program named the MMA.exe,

or another name, to be installed into a general

purpose digital computer device to accomplish

said methods and to output a result of said

methods to a display or a memory or another

computer on a network, or to a user.

Claim 2 (currently amended): A method as in claim

1, wherein determining said disease risk yielded by

the difference between the measured value and the

normal of said LDL concentration parameterthe nine

<u>disease risks are yielded by the differences between</u>

<u>the measured values and the normal values of the nine</u>

<u>atherosclerotic parameters</u>, said method comprising

the steps of:

a measured value, c_m in mg/dL, of the
    individual's LDL concentration in human serum
    is determined using a medical technique for
    measuring the concentration of blood
    constituents or said c_m is determined by the
    physician,

a normal value, c_n in mg/dL, of said LDL
    concentration is determined by the physician or
    said c_n = 100 mg/dL for adult,

substituting said c_m and said c_n into the
    following expression where $c_m \geq c_n$:

$$R_1 = \left(\frac{c_m}{c_n}\right)^{\frac{11}{9}} - 1 \qquad\qquad (1)$$

and

calculating (1) yields ~~said~~ <u>the</u> disease risk R_1
    caused by ~~said~~ <u>the</u> LDL concentration parameter
    related to the atherosclerotic risk factors
    being an elevated LDL concentration in human
    serum, high-fat diet, hypercholesterolemia or

Page 6 of 21

other risk factors that increase said LDL

concentration;

a measured value, c_m in mg/L, of the individual's

CRP concentration in human blood plasma is

determined using a medical technique for

measuring the concentration of blood

constituents or said c_m is determined by the

physician,

a normal value, c_n in mg/L, of said CRP

concentration and an equivalent factor, F, are

determined by the physician wherein $F = \left(\dfrac{D_c}{D_L}\right)^{\frac{16}{27}}$,

D_c = the CRP diffusion coefficient and D_L = the

LDL diffusion coefficient or said c_n = 1.0 mg/L

for adult and said F = 0.66,

substituting said c_m, said c_n and said F into the

following expression where $c_m \geq c_n$:

$$R_2 = F \left(\left(\frac{c_m}{c_n}\right)^{\frac{11}{9}} - 1\right) \qquad\qquad (2)$$

and

calculating (2) yields the disease risk R_2

caused by the CRP concentration parameter

related to the atherosclerotic risk factors
being an elevated CRP level in human blood
plasma, systemic inflammation, infectious
agents or other risk factors that increase said
CRP level;

a measured value, p_m in mmHg, of the individual's
blood systolic pressure is determined using a
medical technique for measuring the human blood
pressure or said p_m is determined by the
physician,

a normal value, p_n in mmHg, of said systolic
pressure is determined by the physician or said
$p_n = 120$ mmHg for adult,

substituting said p_m and said p_n into the
following expression where $p_m \geq p_n$:

$$R_3 = \left(\frac{P_m}{P_n}\right)^{\frac{1}{3}} - 1 \qquad\qquad (3)$$

and

calculating (3) yields the disease risk R_3
caused by the systolic pressure parameter
related to the atherosclerotic risk factors
being an elevated level of blood systolic
pressure, family history of hypertension or

Page 8 of 21

other risk factors that increase said systolic
pressure;

a measured value, p_m in mmHg, of the individual's
blood diastolic pressure is determined using a
medical technique for measuring the human
blood pressure or said p_m is determined by the
physician,

a normal value, p_n in mmHg, of said blood
diastolic pressure is determined by the
physician or said p_n = 70 mmHg for adult,

substituting said p_m and said p_n into the
following expression where $p_m \geq p_n$:

$$R_4 = \left(\frac{P_m}{P_n}\right)^{\frac{1}{3}} - 1 \qquad (4)$$

and

calculating (4) yields the disease risk R_4
caused by the diastolic pressure parameter
related to the atherosclerotic risk factors
being an elevate level of blood diastolic
pressure, family history of hypertension or
other risk factors that increase said diastolic
pressure;

a measured value, f_m in s^{-1}, of the individual's heart rate is determined using a medical technique for measuring the human heart rate or said f_m is determined by the physician,

a normal value, f_n in s^{-1}, of said heart rate is determined by the physician or said $f_n = 72$ per minute for adult,

substituting said f_m and said f_n into the following expression where $f_m > f_n$:

$$R_s = \left(\frac{f_m}{f_n}\right)^{\frac{2}{9}} - 1 \tag{5}$$

and

calculating (5) yields the disease risk R_5 caused by the heart rate parameter related to the atherosclerotic risk factors being an elevated level of heart rate, smoking cigarette, depression or other risk factors that increase said heart rate;

a measured radius value, a_m in cm, of the individual's arterial vessel at the lesion-prone sites of arterial bifurcations, arterial branching, arterial curvatures or arterial tapering is determined using a medical

technique for measuring the sizes of arterial

vessels or said a_m is determined by the

physician,

a normal value, a_n in cm, of said arterial radius

is determined by the physician or said $a_n = a$

value between 0.2 cm and 2.2 cm for adult,

substituting said a_m and said a_n into the

following expression where $a_m \geq a_n$:

$$R_6 = \left(\frac{a_m}{a_n}\right)^{\frac{2}{3}} - 1 \qquad\qquad (6)$$

and

calculating (6) yields the disease risk R_6 caused

by the arterial radius parameter related to the

atherosclerotic risk factors being an increased

size of arterial radius at said lesion-prone

sites or other risk factors that increase the

size of said arterial radius;

a measured temperature value, T_m in °C, of the

individual's plasma fluid in the region at said

lesion-prone sites is determined using a

medical technique for measuring the temperature

of human blood plasma or said T_m is determined

by the physician,

a normal value, T_n in °C, of said plasma
temperature is determined by the physician or
said $T_n = 37$°C,

substituting said T_m and said T_n into the
following expression where $T_m \geq T_n$:

$$R_7 = \left(\frac{T_m}{T_n}\right)^{\frac{16}{27}} - 1 \qquad (7)$$

and

calculating (7) yields the disease risk R_7 caused
by the plasma temperature parameter related to
the atherosclerotic risk factors being an
elevated temperature of said human blood plasma
at said lesion-prone sites, elevated body
temperature-related diseases or other risk
factors that increase said plasma temperature;

a measured value, α_m in degree, of the angle
between gravity and the average velocity of the
blood fluid in the region at said lesion-prone
sites is determined using a medical technique
for measuring the human arterial geometries or
said α_m is determined by the physician,

a normal value, α_n in degree, of said angle is
determined by the physician or said $\alpha_n = a$

Page 12 of 21

value between the 10° and 60° for adult,

substituting said α_m and said α_n into the

following expression where $\alpha_n \geq \alpha_m$:

$$R_8 = \left(\frac{\cos\alpha_m}{\cos\alpha_n}\right)^{\frac{2}{9}} - 1 \qquad (8)$$

and

calculating (8) yields the disease risk R_8 caused

by the angle parameter related to the

atherosclerotic risk factors being a reduced

size of said angle or other risk factors that

reduce said angle size; and

a measured value, z_m in cm, of the individual's

axial length of diffusion flux along the inner

arterial wall at said lesion-prone sites is

determined using a medical technique for

measuring the human arterial geometries or said

z_m is determined by the physician,

a normal value, z_n in cm, of said axial length is

determined by the physician or said $z_n = a$

value between 0.10 cm and 1.00 cm,

substituting said z_m and said z_n into the

Appl. No. 10/810,296
Amdt. Dated Aug. 31, 2007

Reply to Office action of Aug. 22, 2007

following expression where $z_m \leq z_n$:

$$R_9 = \left(\frac{z_n}{z_m}\right)^{\frac{2}{9}} - 1 \qquad\qquad (9)$$

and

calculating (9) yields the disease risk R_9 caused by the diffusion length parameter related to the atherosclerotic risk factors being a decrease in said axial length of the diffusion flux or other risk factors that decrease said diffusion length.

Claim 3-10 (canceled)

Claim 11 (currently amended): ~~A method as in claim 1 having said nine atherosclerotic parameters caused the nine disease risks and~~ The method of claim 2, further comprising: adding said all nine disease risks R_1 to R_9 together so as to yield a total risk of said disease consisting;

a current total risk of said disease related to the currently measured values of said atherosclerotic parameters; and

a previous total risk of said disease related to the previously measured values of said

Page 14 of 21

atherosclerotic parameters.

Claim 12 (currently amended): A method as in claim 1 having said total risk of said disease and The method of claim 11, further comprising: determining a disease risk level containing said total risk of said disease, said method comprising the steps of:

dividing the disease risk level into the
following seven risk sublevels: $0.84 \geq$ first
disease risk level ≥ 0.00, $1.75 \geq$ second
disease risk level > 0.84, $2.70 \geq$ third disease
risk level > 1.75, $3.70 \geq$ fourth disease risk
level > 2.70, $4.70 \geq$ fifth disease risk level $>$
3.70, $5.80 \geq$ sixth disease risk level > 4.70
and seventh disease risk level > 5.80; and

selecting a disease risk level containing said
total risk of said disease from among seven of
said disease risk sublevels.

Claim 13 (currently amended): A method as in claim 1 having said total risk of said disease and The method of claim 11, further comprising: selecting an atherosclerotic risk factor related to

the atherosclerotic parameter having the greatest contribution to said total risk of said disease so as to result in said risk factor as a primary therapy target of said disease.

Claim 14 (currently amended): ~~A method as in claim 1 having said LDL concentration parameter caused the disease risk R~~$_1$ ~~and said CRP concentration parameter caused the disease risk R~~$_2$ ~~and~~ The method of claim 2, further comprising: selecting ~~said~~ a greater flux between the LDL mass transfer flux and the monocyte mass transfer flux so as to result in said greater flux as a primary cause in said disease ~~, said method~~ comprising ~~the steps of~~:

selecting the LDL mass transfer flux as a primary cause in said disease when said $R_1 \geq$ said R_2; or

selecting the monocyte mass transfer flux as a primary cause in said disease when said $R_1 <$ said R_2.

Claim 15 (currently amended): ~~A method as in claim 1 having said LDL concentration parameter caused the disease risk R~~$_1$ ~~and said CRP concentration parameter caused the disease risk R~~$_2$ ~~and~~ The method

of claim 2, further comprising: selecting ~~said~~ a greater concentration level between the LDL level in the human serum and the CRP level in the human blood plasma so as to result in said greater level as a secondary therapy target~~, said method~~ comprising ~~the steps of~~:

> selecting the LDL level in the serum as a secondary therapy target of said disease when said $R_1 \geq$ said R_2; or

> selecting the CRP level in the plasma as a secondary therapy target of said disease when said $R_1 <$ said R_2.

Claim 16 (currently amended): ~~A method as in claim 1 having said current total risk of said disease and said previous total risk of said disease and determining said~~ The method of claim 11, ·further comprising: determining a relative ratio between said current total risk of said disease and said previous total risk of said disease so as to yield said relative ratio as a therapeutic efficacy of said disease.

Claim 17 (previously presented): A method as in claim 1 repeating all the methods in said all

Page 17 of 21

processes in claim 1 until the individual's disease
risk level is reduced to a normal level for said
individual who requires the therapy to prevent or to
treat atherosclerosis-related CHD or stroke.

Claim 18 (previously presented): A method as in
claim 1, wherein all the methods in said all
processes in claim 1 are written as an executable
computer program named the MMA.exe, or another name,
to be installed into a general purpose digital
computer device to accomplish said method and to
output a result of said method to a display or a
memory or another computer on a network, or to a user
comprising:

starting the MMA.exe program on said device;

inputting the currently measured values, the
    previously measured values and the normal
    values of the individual's atherosclerosis
    parameters into the input screen of said
    MMA.exe by using the keyboard of said device;

clicking the "update" button and the "calc. risk"
    button of said input screen;

clicking the "evaluate" button of the MMA.exe

Page 18 of 21

output screen; and

outputting said output screen to a display or a
   memory or another computer on a network, or to
   a user by using said computer device so as to
   produce a result of said methods, called the
   screening report containing a total risk of
   said disease, a disease risk level, a primary
   cause in said disease, a primary therapy target
   of said disease, a secondary therapy target of
   said disease and a therapeutic efficiency, to
   an individual who requires the diagnosis, the
   prevention or the treatment of atherosclerosis-
   related CHD or stroke or other cardiovascular
   disease.